

AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A solder supplying method for forming solder coating on a metal film comprising: ~~through~~

positioning a substrate₁ having the metal film on a surface₁ with the surface facing up in a liquid which is heated to be hotter than a melting point of the solder₁

melting the solder; and

dropping solder fine particles made of the melted solder ~~being melted onto~~ on the substrate in the liquid₁.

wherein a size range of the solder fine particles is within 3 to 15 μ m in diameter.

2. (Currently Amended) The solder supplying method according to claim 1, wherein the solder fine particles, which are dropped and come in contact with the metal film or the solder coating, are kept in ~~that state for~~ contact with either one of the metal film or the solder coating for a certain time until solder wet is caused wetting occurs.

3. (Original) The solder supplying method according to claim 1, wherein the solder fine particles to be dropped on the substrate are limited to the ones whose falling speed is within a specific range.

4. (Currently Amended) A solder bump forming method for forming a solder bump on a pad electrode comprising: ~~through:~~

positioning a substrate having the pad electrode on a surface with the surface facing up in a liquid which is heated to be hotter than a melting point of the solder;

melting the solder;

supplying solder fine particles made of the melted solder ~~being melted~~ into the liquid; and

dropping the solder fine particles onto ~~on~~ the substrate;

wherein a size range of the solder fine particles is within 3 to 15 μ m in diameter.

5. (Original) The solder bump forming method according to claim 4, wherein the solder fine particles are formed by breaking in the liquid the solder being melted.

6. (Original) The solder bump forming method according to claim 4, wherein flux is contained in the liquid.

7. (Currently Amended) The solder bump forming method according to claim 4, wherein an organic acid is contained in the liquid or the liquid is made of the

organic acid, wherein ~~and~~ the organic acid has a reduction effect which removes an oxide on a metal surface.

8. (Currently Amended) The solder bump forming method according to claim 4, wherein a diameter of the solder fine particle is smaller than a ~~shortest~~ minimum distance between ~~peripheral edges of the pad electrodes adjacent to each other.~~

9. (Currently Amended) ~~[[A]]~~ The solder bump forming method of claim 1, utilizing a solder bump forming apparatus, said solder bump forming apparatus comprising:

a liquid tank for containing ~~enclosing~~ a liquid heated to be hotter than a melting point of the solder; ~~and~~

a substrate holder provided in the liquid tank which holds a substrate having ~~which has pad electrodes on a surface and is positioned in the liquid with the surface facing up in the liquid; and~~

a solder fine particle supplier which supplies ~~supplying means for supplying~~ the solder fine particles made of the melted solder being melted ~~into the liquid; and~~ drops dropping the solder fine particles onto ~~on~~ the substrate.

10. (Currently Amended) The solder bump forming apparatus method according to claim 9, wherein the solder fine particle supplier ~~supplying means~~ forms the solder fine particles through breaking melted solder in the liquid ~~the solder being melted.~~

11. (Currently Amended) The solder bump forming apparatus method according to claim 9-10, wherein:

the liquid tank comprises a first liquid tank for containing ~~enclosing~~ the substrate holder and the liquid and a second liquid tank for containing ~~enclosing~~ the liquid and the melted solder deposited ~~being melted and sunk~~ in the liquid;

upper sections of the first liquid tank and the second liquid tank are connected ~~communicate~~ with each other so that the liquid and the solder fine particles can flow between the first and the second liquid tank ~~while bottom sections do not~~; and

the solder fine particle supplier ~~supplying means forms~~ further comprises a grinder for forming the solder fine particles by through breaking the melted solder ~~being melted~~ deposited in the bottom of the second liquid tank and supplies the solder fine particles to the first liquid tank from ~~the upper section of the~~ second liquid tank through the connected portion.

12. (Currently Amended) The solder bump forming ~~apparatus~~ method according to claim 9 ~~10~~, wherein:

the liquid tank comprises a first liquid tank for containing ~~enclosing~~ the substrate holder, the liquid and the melted solder ~~being melted and sunk~~ deposited in the liquid, and a second liquid tank for containing ~~enclosing~~ the liquid and the melted solder ~~being melted and sunk~~ deposited in the liquid;

upper sections and bottom sections of the first liquid tank and the second liquid tank are connected ~~communicate~~ with each other so that the liquid and the solder fine particles can flow between the first and the second liquid tank; and

the solder fine particle supplier ~~supplying means forms~~ further comprises a grinder for forming the solder fine particles by through breaking the melted solder

~~being melted~~ deposited in the bottom of the first liquid tank and the second liquid tank, and supplies the solder fine particles to the first liquid tank from ~~the upper section of the second liquid tank through the upper connected portion,~~ and reutilizes ~~the solder fine particles sunk in a bottom of the first liquid tank as the solder being melted.~~

13. (Currently Amended) The solder bump forming ~~apparatus~~ method according to claim 9, wherein flux is contained in the liquid.

14. (Currently Amended) The solder bump forming ~~apparatus~~ method according to claim 9, wherein an organic acid or flux is contained in the liquid or the liquid is made of the organic acid, and the organic acid or the flux has a reduction effect which removes an oxide on a metal surface.

15. (Currently Amended) The solder bump forming ~~apparatus~~ method according to claim 9, wherein a diameter of the solder fine particle is smaller than a minimum shortest distance between ~~peripheral edges of the pad electrodes adjacent to each other.~~

16. (New) The solder bump forming method according to claim 9, wherein the solder fine particle supplier further selects the solder fine particles with a specific size range and drops the selected solder fine particles onto the substrate.

17. (New) The solder supplying method according to claim 1, wherein the metal film is covered with gold.